

MAT188H1S LINEAR ALGEBRA: Course Information **December 13, 2009**

This is the repeat version of MAT188H1F. Since we have less time than normal we will skip some theory and emphasize matrix computations. In particular we will skip Section 1.6 (Elementary Matrices) which was covered in MAT188H1F. As a consequence we will not be able to prove some of the results in Sections 2.1 and 2.2: we will just state the results and do lots of examples. Also, as a former student of MAT188H1F you know that the hardest part of the course is Chapter 4. So we will skim over much of the “easy” stuff in the first three chapters.

Lectures: Mondays, 6-9 PM in SF1101, starting Jan 18. The instructor is D. Burbulla

Except for Monday, March 22: That week the lecture will be Wednesday, March 24, 6-8 PM (in a room to be announced) and tutorial will be Monday, March 22, 6-8 PM in SF1101. (This is because I have to be out of town on March 22.)

Textbook: *Elementary Linear Algebra*, 2nd edition, by Nicholson. There is no solutions manual but some detailed answers can be found in the back of the book.

Marking Scheme: Quizzes: 20% Test: 30% Final Exam: 50%

Homework: The exercises from the textbook that have answers in the back have been selected as homework problems. (See reverse.) You can work on these problems on your own time or get help from a TA in tutorials. Some of the exercises are quite hard.

Tutorials: are Wednesdays, 6-8 PM in WB219 or WB119. Whether we use both rooms or not depends on the enrollment. Tutorials start Wednesday, Jan 20.

Quizzes: There will be eight 30 min quizzes at the end of tutorial: seven on Wednesdays Jan 20, 27, Feb 3, 24, Mar 3, 31, April 7; and one on Monday, Mar 22. The best 6 of your 8 quizzes will count.

Test: There will be a 90 min test in tutorial on Wednesday, Mar 10, 6:15-7:45 PM.

Final Exam: The final exam, 2 and 1/2 hours long, will be scheduled by the Faculty office, during the exam period, April 13 to April 29.

Math Aid Hours: The math aid office is in GB 149. Hours: M 12-4, T 1-3, R 12-4

Calculators: Use of a Casio 260, Sharp 520 or Texas Instrument 30 calculator will be permitted during all quizzes, tests and exams. However, it is still your responsibility to explain your work. A correct answer with no justification will receive no marks.

Course Websites: In addition to the course websites which can be accessed through the U of T portal there is the coordinator’s home page: <http://www.math.toronto.edu/burbulla/>

Course Outline and Homework Exercises: this schedule is approximate. We may have to adjust things during the course. In particular, during the month of March, 3 hrs is probably more than enough to cover a single section but may not be enough to cover two sections. Hence some sections from Chapter 4 appear more than once in the schedule below.

Lectures	Topic	Ref.	Homework
Jan 18	Linear Equations and Matrices (no directed graphs)	Sec 1.1 Sec 1.2 Sec 1.3 Sec 1.4	#1, 2, 4, 6, 7, 8, 9, 10, 11 #1, 3, 4, 6, 8, 9, 10, 12, 14 #1, 2, 4, 6, 7, 8 #1, 2, 4, 6, 7, 8, 10, 12, 13, 14, 16, 18, 20, 21, 22, 24, 25, 26, 28, 30, 32
Jan 25		Sec 1.5	#2, 4, 5, 7, 8, 9, 11, 13, 14, 16, 18, 19, 20, 21, 22, 24, 26, 28, 30
Feb 1	Determinants	Sec 2.1 Sec 2.2	#1, 2, 3, 4, 6, 7, 8, 10, 12, 13, 14, 16, 18, 20 #2, 4, 6, 8, 10, 11, 12, 14, 15, 16, 17, 18, 20, 22
Feb 8	Eigenvalues and Eigenvectors	Sec 2.3 Sec 2.8	#2, 4, 6, 7, 8, 10, 11, 12, 14, 16, 17, 19, 20 #1, 2
Feb 15	Reading Week		No classes
Feb 22	Vector Geometry (mostly review)	Sec 3.1 Sec 3.2 Sec 3.5 Sec 3.3	#2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 20 #1, 2, 3, 4, 6, 8, 9, 10, 12, 14, 16, 18, 20, 22, 24, 26 #1, 3, 4, 6, 8, 10, 12 #2, 4, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26
Mar 1	(skip 3.4.7)	Sec 3.4	#1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13, 14, 16, 18, 20, 22, 24
Mar 8	The Vector Space \mathbb{R}^n	Sec 4.1 Sec 4.2	#2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 15, 16, 18, 20, 22 (start?)
Mar 15		Sec 4.2 Sec 4.3	#1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 14, 16 #1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 16, 17, 20, 23
Mar 24	(Wednesday class)	Sec 4.4	#1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 16, 18, 20
Mar 29		Sec 4.5 Sec 4.6	#1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20 (start)
Apr 5		Sec 4.6 Sec 4.7	#1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 14, 16, 18, 20 #1, 2, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 22